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PATENT & TRADEMARK OFFICE

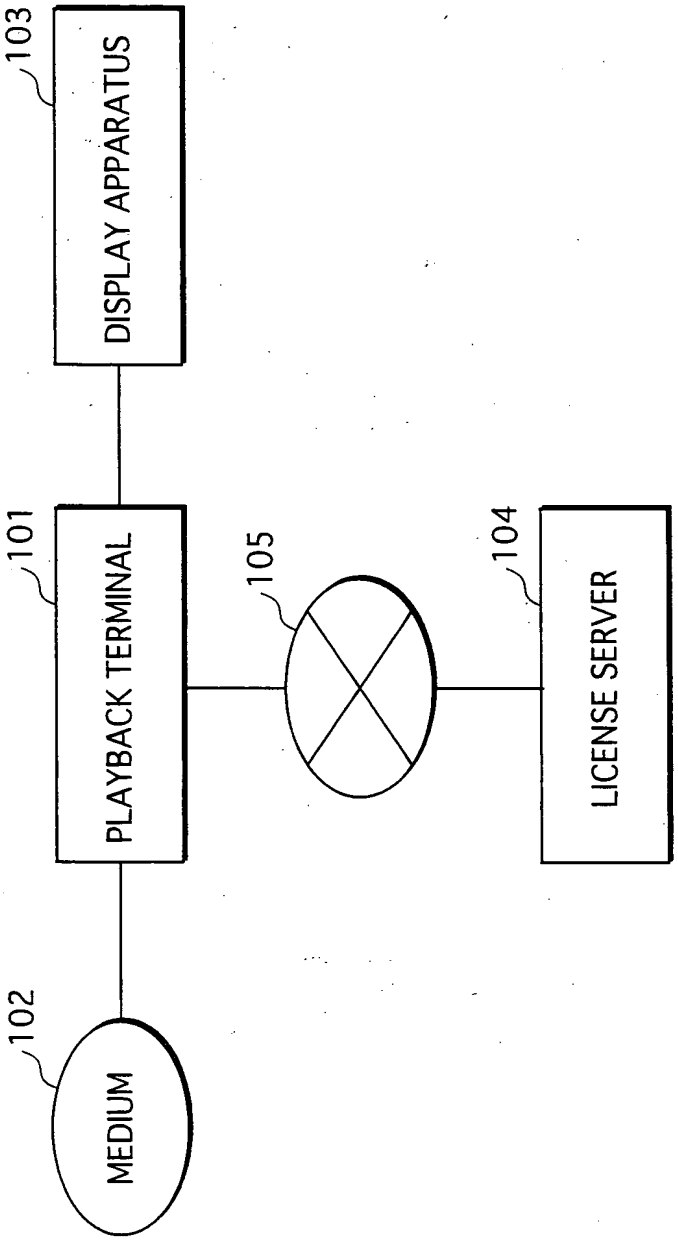


FIG.1

FIG.2

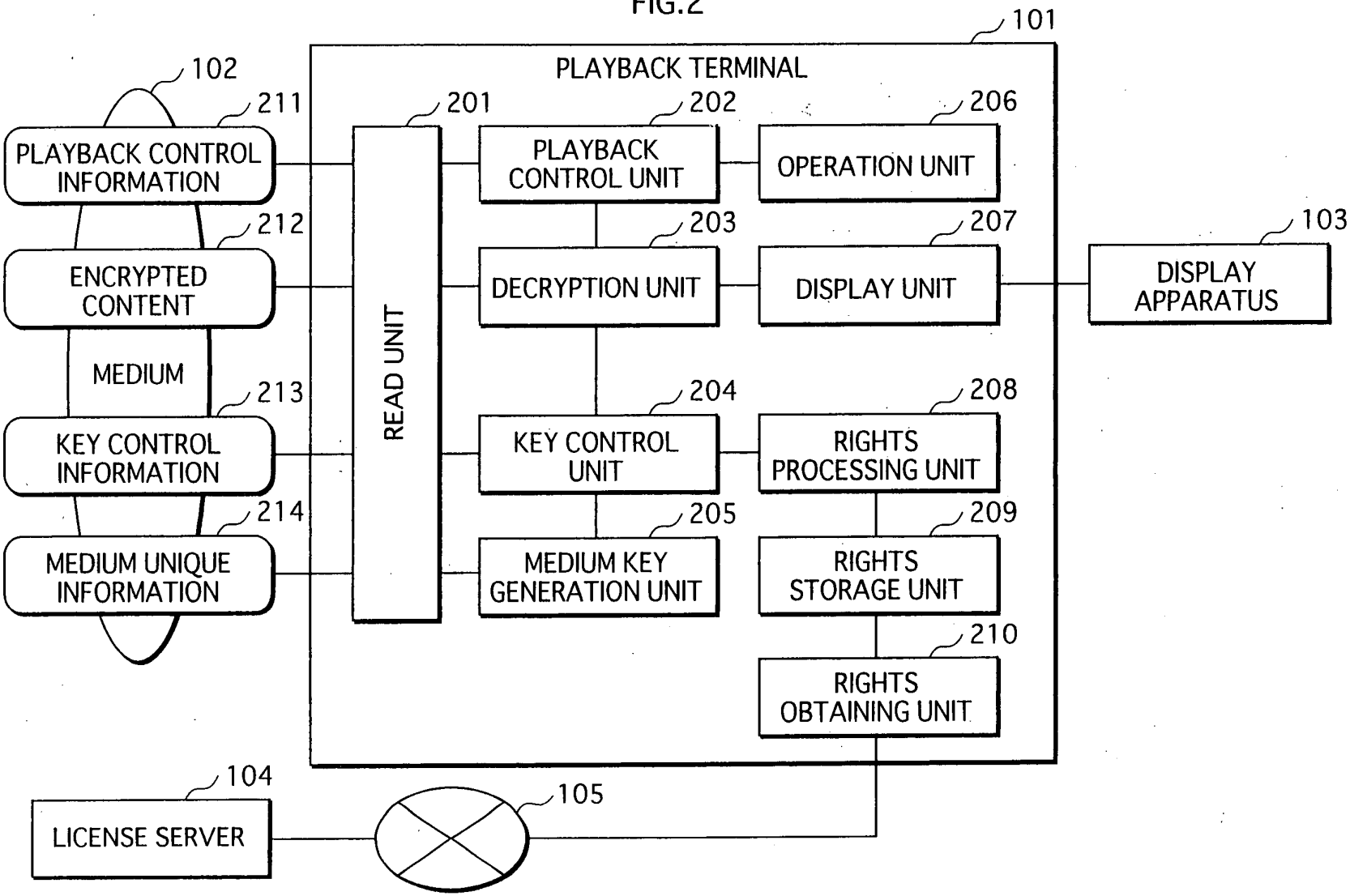

101
PLAYBACK TERMINAL
102
211
PLAYBACK CONTROL INFORMATION
212
ENCRYPTED CONTENT
MEDIUM
213
KEY CONTROL INFORMATION
214
MEDIUM UNIQUE INFORMATION
201
READ UNIT
202
PLAYBACK CONTROL UNIT
203
DECRYPTION UNIT
204
KEY CONTROL UNIT
205
MEDIUM KEY GENERATION UNIT
206
OPERATION UNIT
207
DISPLAY UNIT
208
RIGHTS PROCESSING UNIT
209
RIGHTS STORAGE UNIT
210
RIGHTS OBTAINING UNIT
103
DISPLAY APPARATUS
104
LICENSE SERVER
105

FIG.3

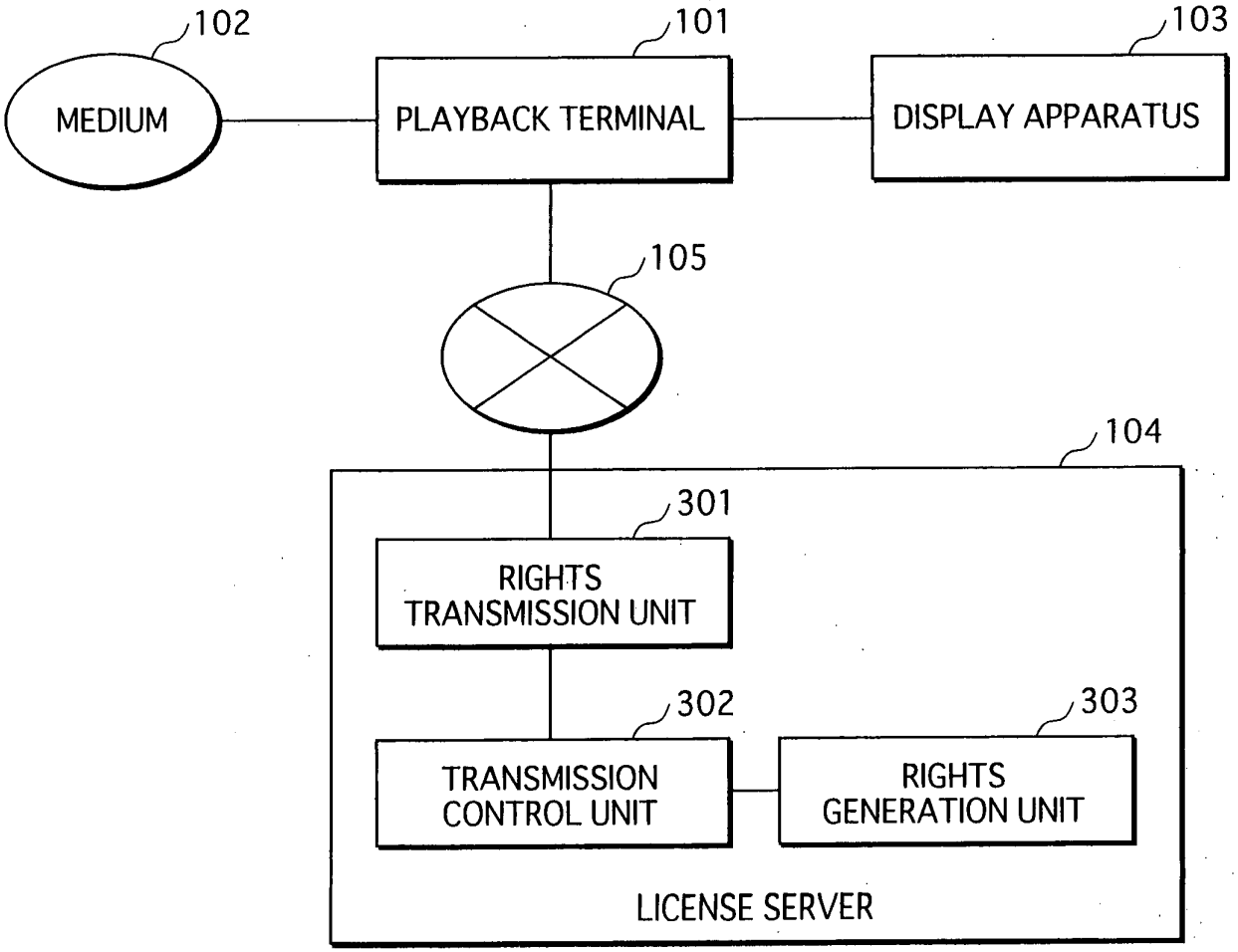

102
MEDIUM
101
PLAYBACK TERMINAL
103
DISPLAY APPARATUS
105
104
301
RIGHTS TRANSMISSION UNIT
302
TRANSMISSION CONTROL UNIT
303
RIGHTS GENERATION UNIT
LICENSE SERVER

FIG.4

PLAYBACK NUMBER	PLAYBACK CONTENT	NEXT PLAYBACK NUMBER	PLAYBACK NUMBER WHEN UNPLAYABLE
1	Opening.mpg	2	—
2	Trailer.mpg	3	4
3	Movie.mpg	5	—
4	Warning.mpg	5	—
5	Menu.mpg	—	—
6	Making.mpg	5	—
7	Interview.mpg	5	—
8	Trailer.mpg	5	—

FIG.5

BUTTON NUMBER	PLAYBACK NUMBER ON DETERMINATION	UPWARD MOVEMENT	DOWNWARD MOVEMENT	LEFTWARD MOVEMENT	RIGHTWARD MOVEMENT
1	3	3	2	3	2
2	6	1	3	1	3
3	7	2	4	2	4
4	8	4	1	4	1

FIG.6

PLAYBACK CONTENT	CONTENT UNIQUE INFORMATION	KEY GENERATION INFORMATION	PLAYABILITY INFORMATION	COPYABILITY INFORMATION	CORRESPONDING RIGHTS METHOD INFORMATION
Opening.mpg	1111	MEDIUM KEY	PLAYABLE	Once	—
Trailer.mpg	2222	MEDIUM KEY	PLAYABLE	Free	—
Movie.mpg	3333	COMPOSITE KEY	NOT PLAYABLE	Never	METHOD A
Warning.mpg	4444	MEDIUM KEY	PLAYABLE	Never	—
Menu.mpg	5555	MEDIUM KEY	PLAYABLE	Never	—
Making.mpg	6666	RIGHTS KEY	NOT PLAYABLE	Never	METHOD A, METHOD B
Interview.mpg	7777	RIGHTS KEY	NOT PLAYABLE	Never	METHOD B

FIG.7

DEVICE UNIQUE INFORMATION	ENCRYPTED MEDIUM KEY
0001	qwerty
0002	asdfgh
0004	zxcvbn
0005	uiop@[
0006	jkl ; :]
0007	m, . / ¥ ¥
⋮	⋮

FIG.8

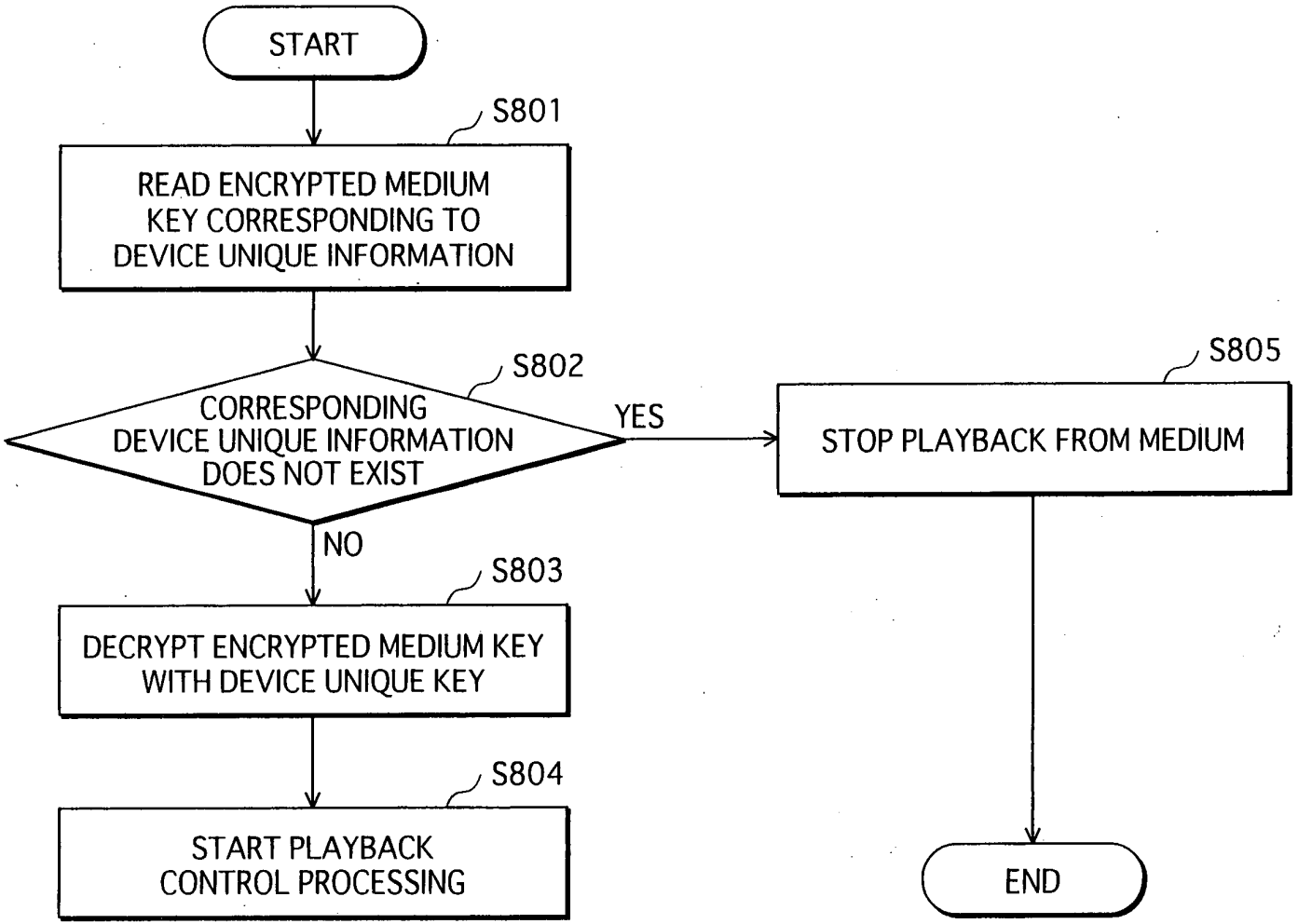

START
S801
READ ENCRYPTED MEDIUM KEY CORRESPONDING TO DEVICE UNIQUE INFORMATION
S802
CORRESPONDING DEVICE UNIQUE INFORMATION DOES NOT EXIST
YES
S805
STOP PLAYBACK FROM MEDIUM
NO
S803
DECRYPT ENCRYPTED MEDIUM KEY WITH DEVICE UNIQUE KEY
S804
START PLAYBACK CONTROL PROCESSING
END

FIG.9

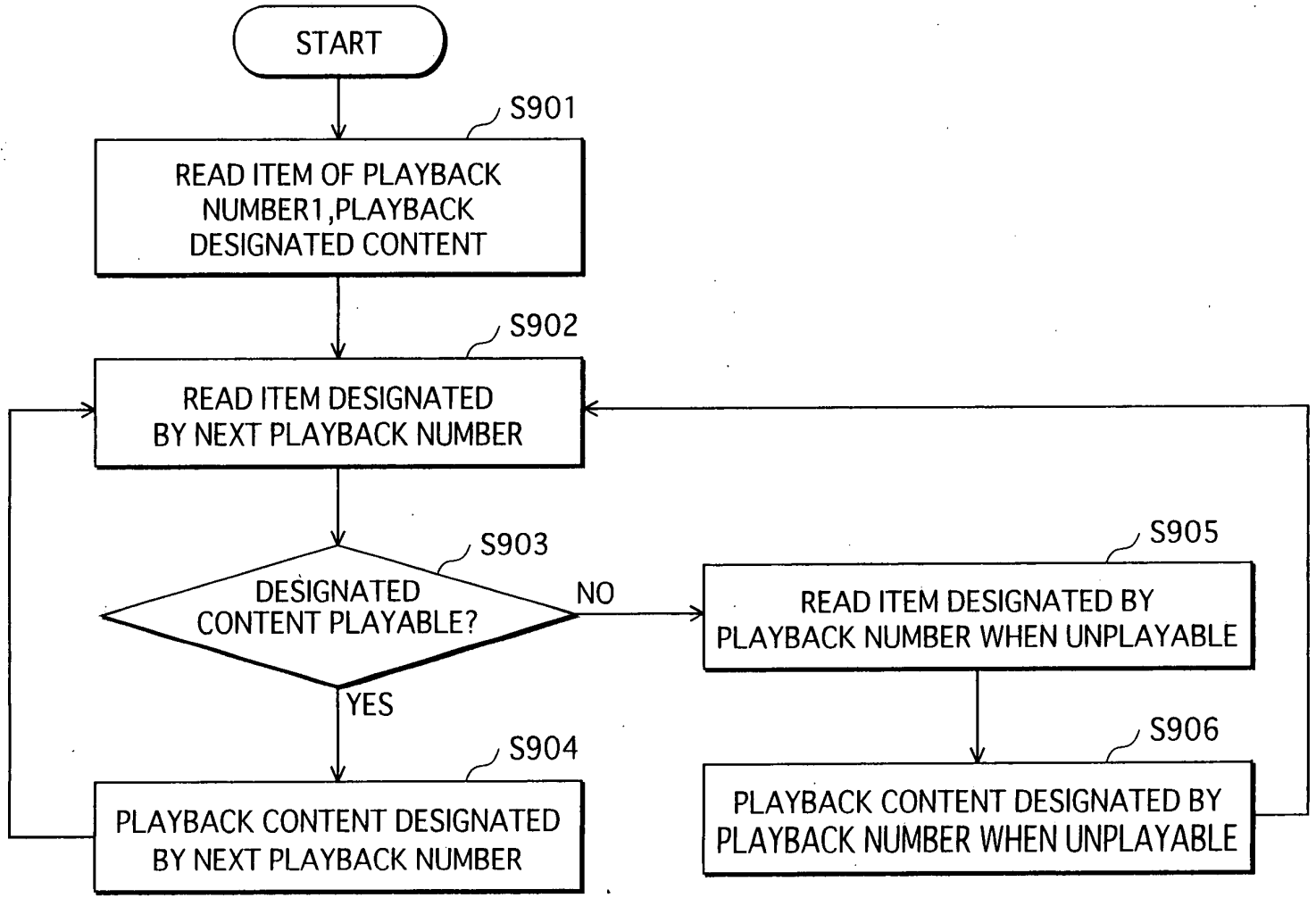

START
S901
READ ITEM OF PLAYBACK NUMBER1,PLAYBACK DESIGNATED CONTENT
S902
READ ITEM DESIGNATED BY NEXT PLAYBACK NUMBER
S903
DESIGNATED CONTENT PLAYABLE?
NO
YES
S904
PLAYBACK CONTENT DESIGNATED BY NEXT PLAYBACK NUMBER
S905
READ ITEM DESIGNATED BY PLAYBACK NUMBER WHEN UNPLAYABLE
S906
PLAYBACK CONTENT DESIGNATED BY PLAYBACK NUMBER WHEN UNPLAYABLE

FIG.10

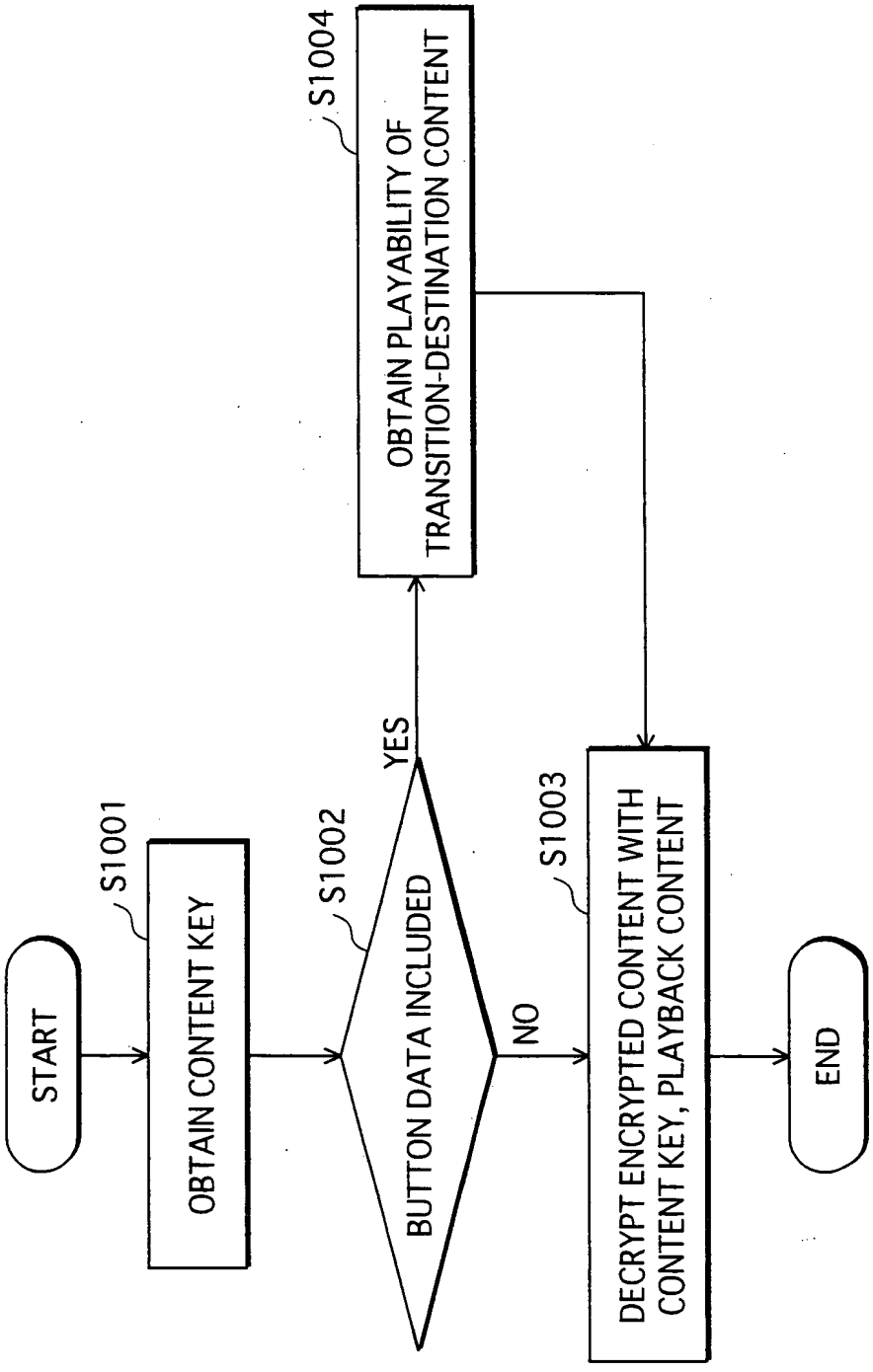

START
S1001
OBTAIN CONTENT KEY
S1002
BUTTON DATA INCLUDED
YES
S1004
OBTAIN PLAYABILITY OF TRANSITION-DESTINATION CONTENT
NO
S1003
DECRYPT ENCRYPTED CONTENT WITH CONTENT KEY, PLAYBACK CONTENT
END

FIG.11

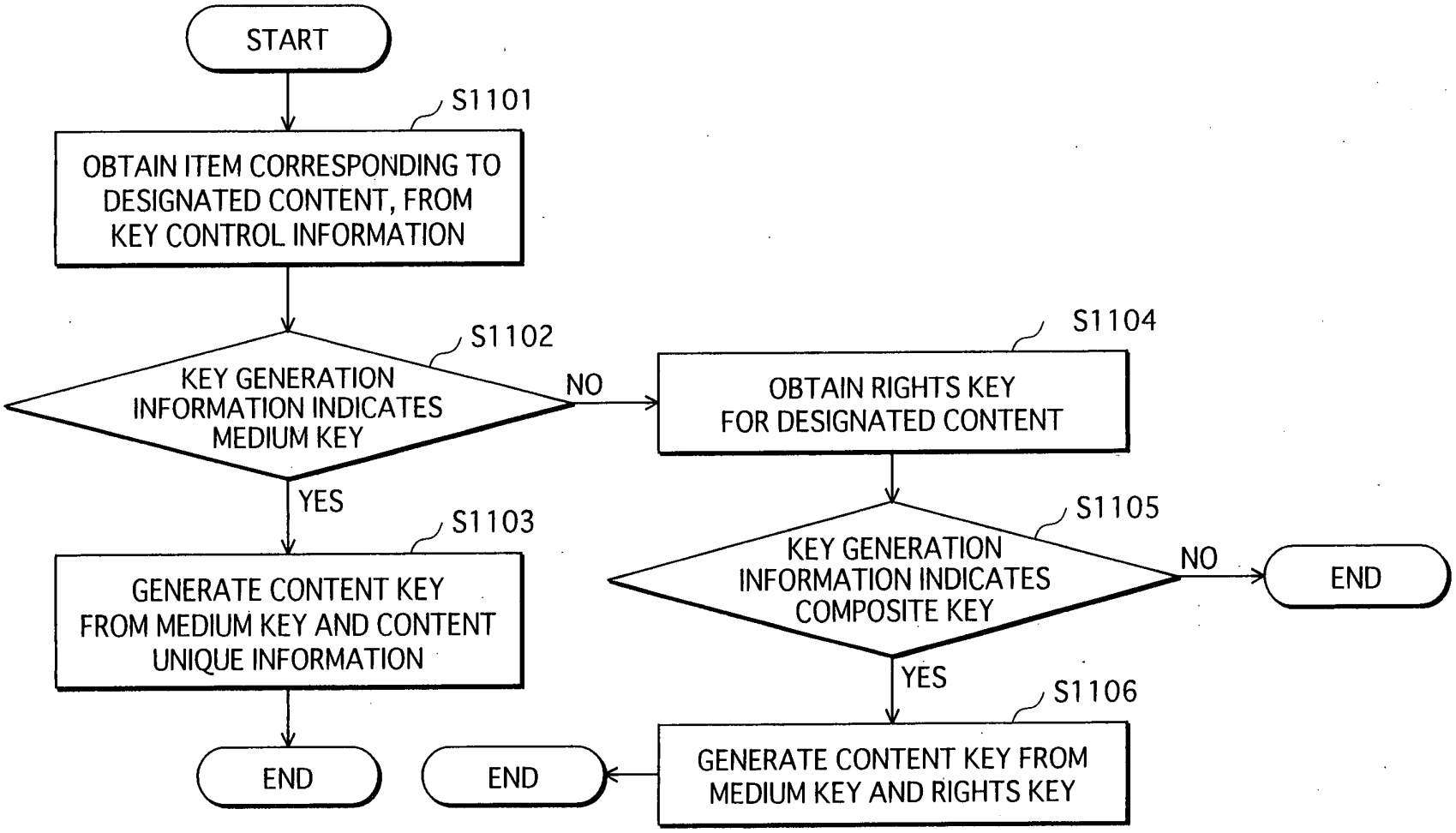

START
S1101
OBTAIN ITEM CORRESPONDING TO DESIGNATED CONTENT, FROM KEY CONTROL INFORMATION
S1102
KEY GENERATION INFORMATION INDICATES MEDIUM KEY
NO
YES
S1103
GENERATE CONTENT KEY FROM MEDIUM KEY AND CONTENT UNIQUE INFORMATION
END
S1104
OBTAIN RIGHTS KEY FOR DESIGNATED CONTENT
S1105
KEY GENERATION INFORMATION INDICATES COMPOSITE KEY
NO
END
YES
S1106
GENERATE CONTENT KEY FROM MEDIUM KEY AND RIGHTS KEY
END

FIG.12

RIGHTS METHOD INFORMATION	CORRESPONDING PLAYBACK CONTENT	RIGHTS KEY	PLAYBACK COUNT	PLAYBACK EXPIRATION
A	Movie.mpg	qwerty	2	—
A	Making.mpg	asdfgh	3	—
B	Making.mpg	asdfgh	—	31/03/2004
⋮	⋮	⋮	⋮	⋮

FIG.13

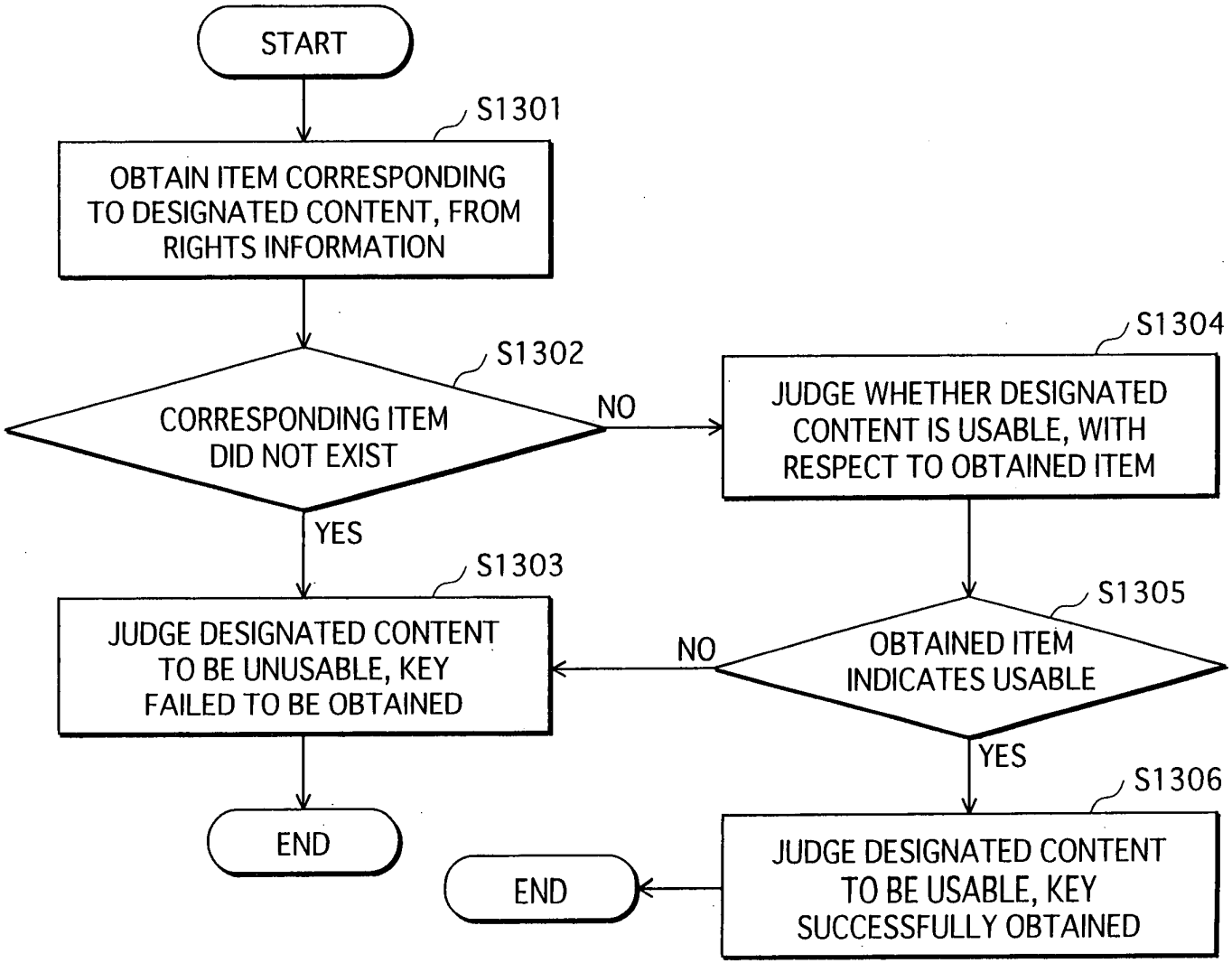

START
S1301
OBTAIN ITEM CORRESPONDING TO DESIGNATED CONTENT, FROM RIGHTS INFORMATION
S1302
CORRESPONDING ITEM DID NOT EXIST
NO
YES
S1303
JUDGE DESIGNATED CONTENT TO BE UNUSABLE, KEY FAILED TO BE OBTAINED
END
S1304
JUDGE WHETHER DESIGNATED CONTENT IS USABLE, WITH RESPECT TO OBTAINED ITEM
S1305
OBTAINED ITEM INDICATES USABLE
NO
YES
S1306
JUDGE DESIGNATED CONTENT TO BE USABLE, KEY SUCCESSFULLY OBTAINED
END

FIG.14

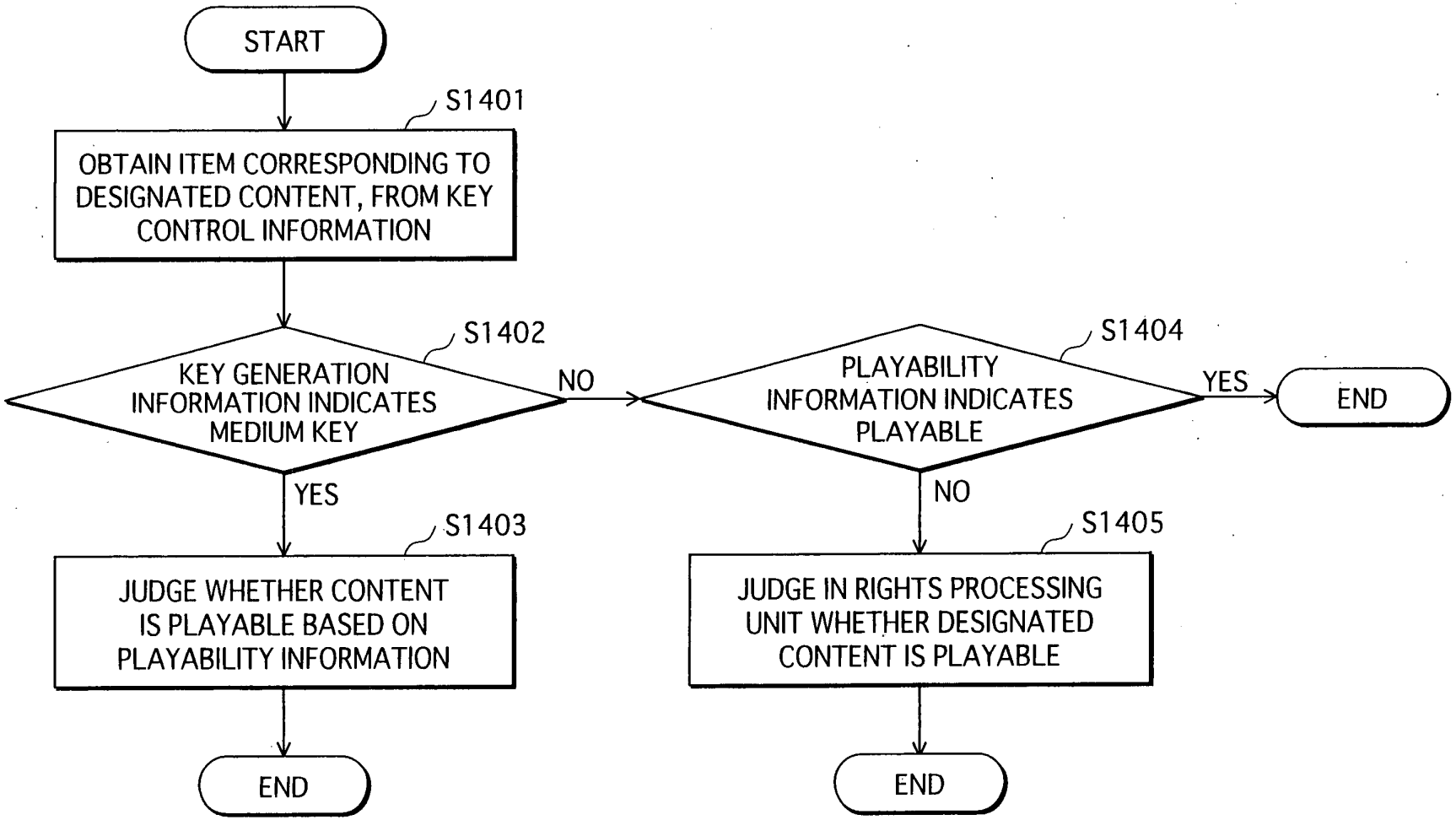
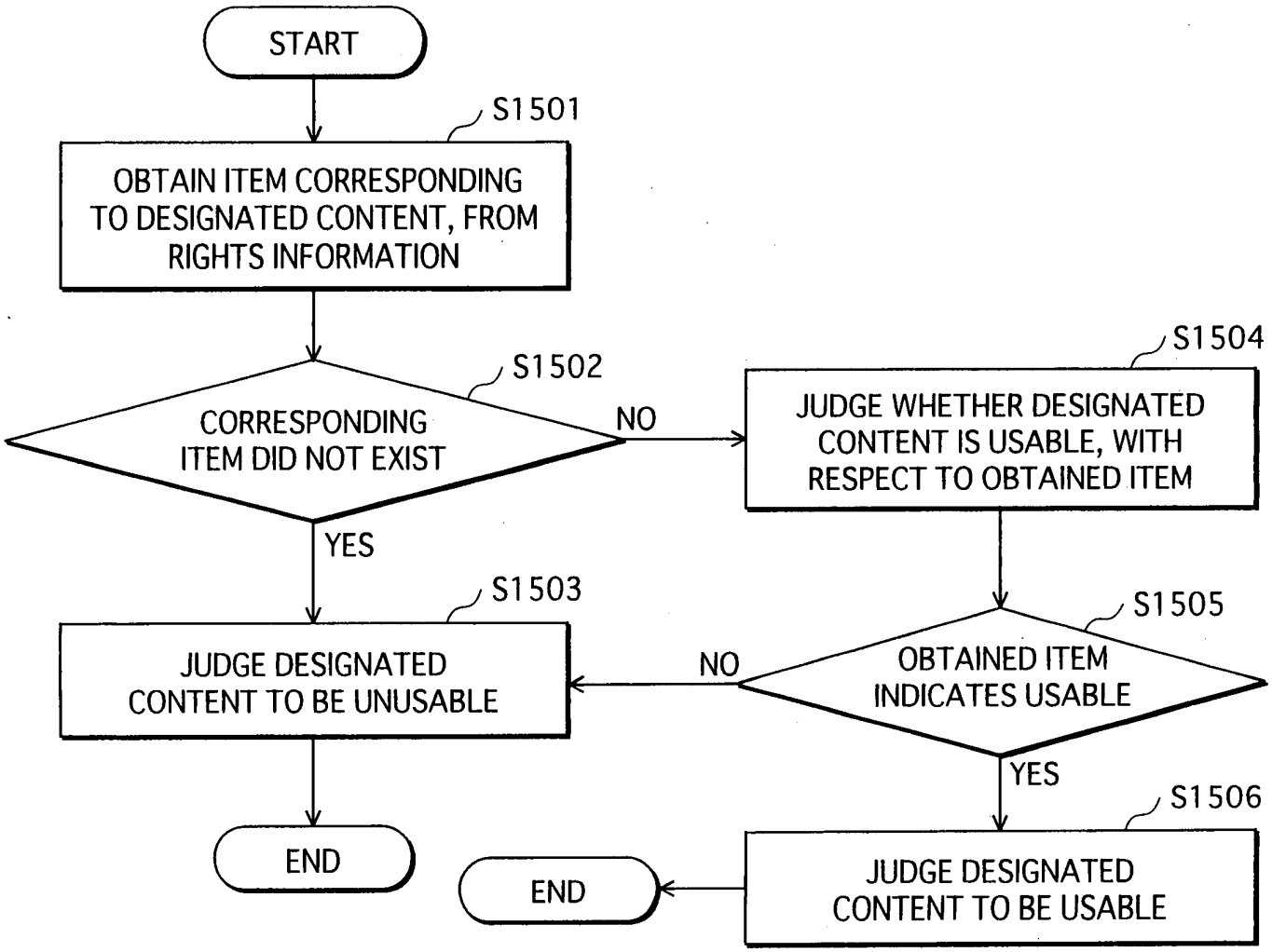

START
S1401
OBTAIN ITEM CORRESPONDING TO DESIGNATED CONTENT, FROM KEY CONTROL INFORMATION
S1402
KEY GENERATION INFORMATION INDICATES MEDIUM KEY
NO
YES
S1403
JUDGE WHETHER CONTENT IS PLAYABLE BASED ON PLAYABILITY INFORMATION
END
S1404
PLAYABILITY INFORMATION INDICATES PLAYABLE
YES
END
NO
S1405
JUDGE IN RIGHTS PROCESSING UNIT WHETHER DESIGNATED CONTENT IS PLAYABLE
END

FIG.15


START
S1501
OBTAIN ITEM CORRESPONDING TO DESIGNATED CONTENT, FROM RIGHTS INFORMATION
S1502
CORRESPONDING ITEM DID NOT EXIST
NO
YES
S1503
JUDGE DESIGNATED CONTENT TO BE UNUSABLE
END
S1504
JUDGE WHETHER DESIGNATED CONTENT IS USABLE, WITH RESPECT TO OBTAINED ITEM
S1505
OBTAINED ITEM INDICATES USABLE
NO
YES
S1506
JUDGE DESIGNATED CONTENT TO BE USABLE
END